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10/606,196	06/24/2003	Michael Goodwin	CLABP203	2245

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VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014

EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	PAPER NUMBER
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,196	GOODWIN ET AL.	
	Examiner	Art Unit	
	Jakieda R. Jackson	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-63 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4,6-7, 11-36, 44-54 and 57-63 is/are rejected.

7)☐ Claim(s) 5,8-10,37-43,55 and 56 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 June 2003 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings filed June 24, 2003 are handwritten and some are not clear. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 63** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 63 is drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP § 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361,31 USPQ2d at 1760 (claim to a data

structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. According to claims 1 and 63, they recite the same limitations. Claim 1 being a method and claim 63 being a program. Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process, and therefore is not statutory.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-2, 7, 11-20, 25-33, 44, 57-63** are rejected under 35 U.S.C. 102(e) as being anticipated by Vinton et al. (USPN 2004/0044525), hereinafter referenced as Vinton.

Regarding **claims 1, 58, 59 and 63**, Vinton discloses a method, system, and program, hereinafter referenced as a method for modifying a transient audio event in an audio signal, comprising:

detecting a transient audio event in a first portion of the audio signal (column 9, paragraph 0133);

determining a graded response to the detected transient audio event (column 6, paragraph 0067); and

modifying said first portion of the audio signal in accordance with the graded response (column 6, paragraph 0067).

Regarding **claim 2**, Vinton discloses a method wherein detecting a transient audio event comprises calculating a spectral flux value associated with said first portion of the audio signal (column 6, paragraph 0067).

Regarding **claim 7**, Vinton discloses a method further comprising calculating a normalized spectral flux value associated with the portion of the audio signal (normalized; column 1, paragraph 0006).

Regarding **claim 11**, Vinton discloses a method wherein the audio signal is read

from a storage device (column 3, paragraph 0029).

Regarding **claim 12**, Vinton discloses a method wherein the audio signal comprises a data stream (data stream, columns 4-5, paragraph 0049).

Regarding **claim 13**, Vinton discloses a method wherein the data stream is a live data stream received in real time at the time the audio data comprising the audio signal is being generated (real time for audio signals; column 4, paragraph 0046).

Regarding **claim 14**, Vinton discloses a method wherein determining a graded response comprises:

receiving a parameter indicative of the magnitude of the transient audio event (magnitude; columns 5-6, paragraphs 0061-0067); and

providing an indication, based at least part on the value of said parameter, of the extent to which the first portion of the audio signal should be modified (column 4, paragraph 0045).

Regarding **claim 15**, Vinton discloses a method wherein said parameter indicative of the magnitude of the transient audio event comprises a spectral flux value associated with said first portion of the audio signal (column 6, paragraph 0067-0071).

Regarding **claim 16**, Vinton discloses a method wherein said parameter indicative of the magnitude of the transient audio event comprises a parameter indicative of the magnitude of the transient audio event relative audio events detected, if any, in other portions of the audio signal (column 5, paragraph 0061 with column 6, paragraph 0067).

Regarding **claim 17**, Vinton discloses a method wherein said in parameter

indicative of the magnitude of the transient audio event comprises a normalized spectral flux value (normalized; column 1, paragraph 0006).

Regarding **claim 18**, Vinton discloses a method wherein said indication comprises a modification factor (column 4, paragraph 0045).

Regarding **claim 19**, Vinton discloses a method wherein the modification factor is determined by mapping said parameter indicative of the magnitude of the transient audio eent to a corresponding value for the modification factor (column 4, paragraph 0045).

Regarding **claim 20**, Vinton discloses a method wherein said mapping comprises using mapping function of which said parameter indicative of the magnitude of the transient audio event comprises an independent variable and said modification factor comprises a dependent variable (column 4, paragraph 0045).

Regarding **claim 25**, Vinton discloses a method wherein said mapping function comprises a table lookup (tables; column 3, paragraph 0033).

Regarding **claim 26**, Vinton discloses a method wherein said mapping function comprises a coefficient, the value of which determines at least in part te value of the modification factor corresponding to any given of said parameter indicative of the magnitude of the transient audio event (column 4, paragraph 0045).

Regarding **claim 27**, Vinton discloses a method wherein said coefficient is associated with a maximum possible value for said modification factor (column 4, paragraph 0045).

Regarding **claim 28**, Vinton discloses a method wherein said coefficient is

associated with a threshold value for said parameter indicative of the magnitude of the transient audio event (column 4, paragraph 0045).

Regarding **claim 29**, Vinton discloses a method wherein said coefficient is associated with a rate of change in the value of said modification factor for an associated unit change in the value of said parameter indicative of the magnitude of the transient audio event for at least a portion of said mapping function (column 4, paragraph 0045).

Regarding **claim 30**, Vinton discloses a method wherein the value of said coefficient may be varied to control the degree of modification of the audio signal associated with a given value for said parameter indicative of the magnitude of the transient audio event (column 4, paragraph 0045).

Regarding **claim 31**, Vinton discloses a method wherein the value of said coefficient is controlled by a user to whom the audio signal is being rendered (column 4, paragraph 0045).

Regarding **claim 32**, Vinton discloses a method wherein modifying said first portion of the audio signal in accordance with the graded response comprises increasing the signal level of said first portion of said audio signal to enhance the transient audio event (column 2, paragraph 0021 with column 4, paragraph 0045).

Regarding **claim 33**, Vinton discloses a method wherein modifying said first portion of the audio signal in accordance with the graded response comprises decreasing the signal level of said first portion of said audio signal to at least partially suppress the transient audio event (column 9, paragraph 0136).

Regarding **claim 44**, Vinton discloses a method wherein determining a graded response to the detected transient audio event comprises determining a first graded response for a first frequency band and modifying said first portion of the audio signal in accordance with the graded response comprises modifying said first portion of the audio signal within said first frequency band in accordance with said first graded response (column 4, paragraph 0045).

Regarding **claim 57**, Vinton discloses a method for modifying transient audio events in an audio signal, comprising:

receiving a parameter indicative of the degree of spectral change between a first portion of the audio signal and a second portion of the audio signal (varying spectrum; column 5, paragraph 0060); and

modifying said second portion of said audio signal by a factor the value of which is determined at least in part by said degree of spectral change between a first portion of the audio signal and a second portion of the audio signal (column 4, paragraph 0045).

Regarding **claim 60**, Vinton discloses a method wherein the data input line is configured to receive said audio signal from an external source (column 3, paragraph 0029).

Regarding **claim 61**, Vinton discloses a method wherein the data input line is configured to receive said audio signal from a storage device (column 3, paragraph 0029).

Regarding **claim 62**, Vinton discloses a method wherein the data input line is

configured to receive said audio signal from a device configured to read a physical medium on which data associated with the audio signal has been stored (column 3, paragraph 0029).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vinton in view Scheirer et al. (USPN 6,570,991), hereinafter referenced as Scheirer.

Regarding **claim 3**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank.

Scheirer teaches a method wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank (filter bank; column 8, lines 10-44), to determine the total power or energy envelope.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank, as

taught by Scheirer, determine the total power or energy envelope, which approximates a pulse train of onset positions (column 8, lines 10-17).

8. **Claims 4, 6 and 21-23, 34-36, 50-51 and 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vinton in view of Dowling et al. (USPN 2004/0212320), hereinafter referenced as Dowling.

Regarding **claim 4**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach determining a short-time Fourier transform.

Dowling teaches a method wherein processing said audio signal using a subband filter bank comprises:

determining the short-time Fourier transform (STFT) for a first frame of the audio signal (column 2, paragraph 0032 with column 3, paragraph 0035);

determining the short-time Fourier transform (STFT) for a second frame of the audio signal, wherein the second frame of the audio signal is subsequent in the time domain to the first frame of the audio signal (column 2, paragraph 0032); and

comparing the STFT result for the second frame with the STFT result for the first frame (column 2, paragraph 0032), to obtain its time-frequency representation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein it determines a short-time Fourier transform, as taught by Dowling, to create a realistic reproduction of the

original performance (column 2, paragraph 0029).

Regarding **claim 6**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein processing said audio signal using a subband filter bank further comprises applying a window to the first frame and the second frame prior to determining the STFT for each respective frame.

Dowling discloses a method wherein processing said audio signal using a subband filter bank further comprises applying a window to the first frame and the second frame prior to determining the STFT for each respective frame (column 6, paragraph 0081), to avoid artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein processing said audio signal using a subband filter bank further comprises applying a window to the first frame and the second frame prior to determining the STFT for each respective frame, as taught by Dowling, to avoid artifacts due to abrupt transitions and to account for possible overlap (column 6, paragraph 0081).

Regarding **claim 21**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said mapping function comprises a linear function.

Dowling discloses a method wherein said mapping function comprises a linear function (column 1, paragraphs 0006-0007), to prevent unwanted artifacts to be introduced.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Vinton's method wherein said mapping function comprises a linear function, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 22**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said mapping function comprises a nonlinear function.

Dowling discloses a method wherein said mapping function comprises a nonlinear function (non-linear function; column 3, paragraph 0039-0040), to smooth the function, which avoids artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said mapping function comprises a nonlinear function, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 23**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said mapping function comprises a hyperbolic tangent function.

Dowling discloses a method wherein said mapping function comprises a hyperbolic tangent function (column 3, paragraph 0040-0041), to avoid spectral-subtraction-like artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said mapping function comprises a hyperbolic tangent function, as taught by Dowling, to create a realistic

reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 34**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein modifying said first portion of the audio signal in accordance with the graded response comprises multiplying said first portion of the audio signal by a modification factor.

Dowling discloses a method wherein modifying said first portion of the audio signal in accordance with the graded response comprises multiplying said first portion of the audio signal by a modification factor (column 3, paragraph 0039-0042), to extract the ambience.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein modifying said first portion of the audio signal in accordance with the graded response comprises multiplying said first portion of the audio signal by a modification factor, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 35**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein modifying said first portion of the audio signal in accordance with the graded response comprises nonlinear modification of said first portion of said audio signal.

Dowling discloses a method wherein modifying said first portion of the audio signal in accordance with the graded response comprises nonlinear modification of said first portion of said audio signal (column 3, paragraph 0039-0042), to smooth the

function, which avoids artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein modifying said first portion of the audio signal in accordance with the graded response comprises nonlinear modification of said first portion of said audio signal, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claims 36 and 54**, Vinton discloses a method for wherein said nonlinear modification comprises:

determining the spectral magnitude of said first portion of the audio signal (column 6, paragraph 0067-0071), but does not specifically teach applying a nonlinear modification to said spectral magnitude of said first potion of the audio signal to yield a modified spectral magnitude value.

Dowling discloses a method comprising applying a nonlinear modification to said spectral magnitude of said first potion of the audio signal to yield a modified spectral magnitude value (column 3, paragraphs 0039-0042), to smooth the function, which avoids artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method comprising applying a nonlinear modification to said spectral magnitude of said first potion of the audio signal to yield a modified spectral magnitude value, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 50**, Vinton discloses a method for modifying a transient audio

event in an audio signal; comprising:

detecting a transient audio event in a first portion of the audio signal (column 9, paragraph 0133), but does not specifically teach applying a nonlinear modification to said first portion of the audio signal.

Dowling discloses a method comprising applying a nonlinear modification to said first portion of the audio signal (column 3, paragraphs 0039-0042), to smooth the function, which avoids artifacts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method comprising applying a nonlinear modification to said first portion of the audio signal, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Regarding **claim 51**, Vinton discloses a method wherein detecting a transient audio event comprises calculating a spectral flux value associated with said first portion of the audio signal (spectral flux; column 6, paragraph 0067-00).

9. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vinton in view of Mitzlaff (USPN 2002/0094795).

Regarding **claim 24**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said mapping function comprises a piecewise linear approximation of a nonlinear function.

Mitzlaff teach a method wherein said mapping function comprises a piecewise

linear approximation of a nonlinear function (column 3, paragraphs 0025-0026), to thereby create a conditioned input signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said mapping function comprises a piecewise linear approximation of a nonlinear function, as taught by Mitzlaff, to thereby create a conditioned input signal, to provide an output signal which is generally or approximately an amplified, linear replica of the input signal (column 3, paragraphs 0025-006).

10. **Claims 45-49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Vinton in view Iijima et al. (USPN 5,909,663), hereinafter referenced as Iijima.

Regarding **claim 45**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said first frequency band is defined by a first lower frequency limit and a first upper frequency limit.

Iijima discloses a method wherein said first frequency band is defined by a first lower frequency limit and a first upper frequency limit (limitations in the frequency; column 15, lines 7-54), to prevent such strange feeling.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said first frequency band is defined by a first lower frequency limit and a first upper frequency limit, as taught by Iijima, to prevent strange perceptual feeling due to repetition of the same

parameter even in cases wherein correct parameters of the current block or frame cannot be produced due to errors or the like on decoding (column 1, lines 55-30).

Regarding **claim 46**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said first lower frequency limit may be varied.

Iijima discloses a method wherein said first lower frequency limit may be varied (limitations in the frequency; column 15, lines 7-54), to prevent such strange feeling.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said first lower frequency limit may be varied, as taught by Iijima, to prevent strange perceptual feeling due to repetition of the same parameter even in cases wherein correct parameters of the current block or frame cannot be produced due to errors or the like on decoding (column 1, lines 55-30).

Regarding **claim 47**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein said first upper frequency may be varied.

Iijima discloses a method wherein said first upper frequency may be varied (limitations in the frequency; column 15, lines 7-54), to prevent such strange feeling.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein said first upper frequency may be varied, as taught by Iijima, to prevent strange perceptual feeling due to repetition of the same parameter even in cases wherein correct parameters of the

current block or frame cannot be produced due to errors or the like on decoding (column 1, lines 55-30).

Regarding **claim 48**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein at least one of said first lower frequency limit and said first upper frequency limit is determined by a user.

Iijima discloses a method wherein at least one of said first lower frequency limit and said first upper frequency limit is determined by a user (limitations in the frequency; column 15, lines 7-54), to prevent such strange feeling.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein at least one of said first lower frequency limit and said first upper frequency limit is determined by a user, as taught by Iijima, to prevent strange perceptual feeling due to repetition of the same parameter even in cases wherein correct parameters of the current block or frame cannot be produced due to errors or the like on decoding (column 1, lines 55-30).

Regarding **claim 49**, Vinton discloses a method wherein determining a graded response to the detected transient audio event further comprises determining a second graded response for a second frequency band and modifying said first portion of the audio signal in accordance with the graded response comprises modifying said first portion of the audio signal within said second frequency band in accordance with said second graded response (column 4, paragraph 0045).

11. **Claims 52-53** is rejected under 35 U.S.C. 103(a) as being unpatentable over Vinton in Dowling, as applied to claim 51 above, and in further view of Scheirer.

Regarding **claim 52**, Vinton in view of Dowling discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank.

Scheirer teaches a method wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank (filter bank; column 8, lines 10-44), to determine the total power or energy envelope.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton in view of Dowling's method wherein calculating a spectral flux value comprises processing said audio signal using a subband filter bank, as taught by Scheirer, determine the total power or energy envelope, which approximates a pulse train of onset positions (column 8, lines 10-17).

Regarding **claim 53**, Vinton discloses a method for modifying a transient audio event in an audio signal, but does not specifically teach determining a short-time Fourier transform.

Dowling teaches a method wherein processing said audio signal using a subabnd filter bank comprises:

determining the short-time Fourier transform (STFT) for a first frame of the audio signal (column 2, paragraph 0032 with column 3, paragraph 0035);

determining the short-time Fourier transform (STFT) for a second frame of the audio signal, wherein the second frame of the audio signal is subsequent in the time domain to the first frame of the audio signal (column 2, paragraph 0032); and

comparing the STFT result for the second frame with the STFT result for the first frame (column 2, paragraph 0032), to obtain its time-frequency representation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinton's method wherein it determines a short-time Fourier transform, as taught by Dowling, to create a realistic reproduction of the original performance (column 2, paragraph 0029).

Allowance

12. **Claims 5, 8-10, 37-43 and 55-56** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R. Jackson whose telephone number is 571.272.7619. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571.272.7843. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRJ
January 30, 2007

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600